



## Complete Summary

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### TITLE

Venous thromboembolism (VTE) diagnosis and treatment: percentage of adult patients suspected of deep vein thrombosis (DVT) who have leg duplex ultrasound with compression performed despite a low clinical pretest probability and a negative D-dimer test.

### SOURCE(S)

Institute for Clinical Systems Improvement (ICSI). Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2009 Feb. 79 p. [220 references]

## Measure Domain

### PRIMARY MEASURE DOMAIN

Process

The validity of measures depends on how they are built. By examining the key building blocks of a measure, you can assess its validity for your purpose. For more information, visit the [Measure Validity](#) page.

### SECONDARY MEASURE DOMAIN

Does not apply to this measure

## Brief Abstract

### DESCRIPTION

This measure is used to assess the percentage of adult patients suspected of deep vein thrombosis (DVT) who have leg duplex ultrasound with compression performed despite a low clinical pretest probability and a negative D-dimer test.

### RATIONALE

The priority aim addressed by this measure is to improve accurate diagnosis and treatment of venous thromboembolism (VTE).

### PRIMARY CLINICAL COMPONENT

Venous thromboembolism (VTE); deep vein thrombosis (DVT); duplex ultrasound with compression; low clinical pretest probability; D-dimer test

#### **DENOMINATOR DESCRIPTION**

Total number of adult patients suspected of deep vein thrombosis (DVT) who have a low clinical pretest probability and a negative D-dimer test (see the related "Denominator Inclusions/Exclusions" field in the Complete Summary)

#### **NUMERATOR DESCRIPTION**

Total number of adult patients suspected of deep vein thrombosis (DVT) who have a low clinical pretest probability and a negative D-dimer test who undergo a leg duplex ultrasound with compression

### **Evidence Supporting the Measure**

#### **EVIDENCE SUPPORTING THE CRITERION OF QUALITY**

- A clinical practice guideline or other peer-reviewed synthesis of the clinical evidence

### **Evidence Supporting Need for the Measure**

#### **NEED FOR THE MEASURE**

Unspecified

### **State of Use of the Measure**

#### **STATE OF USE**

Current routine use

#### **CURRENT USE**

Internal quality improvement

### **Application of Measure in its Current Use**

#### **CARE SETTING**

Hospitals  
Physician Group Practices/Clinics

#### **PROFESSIONALS RESPONSIBLE FOR HEALTH CARE**

Physicians

**LOWEST LEVEL OF HEALTH CARE DELIVERY ADDRESSED**

Group Clinical Practices

**TARGET POPULATION AGE**

Age greater than or equal to 18 years

**TARGET POPULATION GENDER**

Either male or female

**STRATIFICATION BY VULNERABLE POPULATIONS**

Unspecified

**Characteristics of the Primary Clinical Component****INCIDENCE/PREVALENCE**

Unspecified

**ASSOCIATION WITH VULNERABLE POPULATIONS**

Unspecified

**BURDEN OF ILLNESS**

Complications or comorbidities of venous thromboembolism (VTE) include massive pulmonary embolism, contraindications to anticoagulation, known history of heparin-induced thrombocytopenia, extensive iliofemoral thrombosis/phlegmasia, pregnancy, familial bleeding disorders, and severe renal dysfunction.

**EVIDENCE FOR BURDEN OF ILLNESS**

Institute for Clinical Systems Improvement (ICSI). Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2009 Feb. 79 p. [220 references]

**UTILIZATION**

Unspecified

**COSTS**

Unspecified

## Institute of Medicine National Healthcare Quality Report Categories

### IOM CARE NEED

Getting Better

### IOM DOMAIN

Effectiveness

## Data Collection for the Measure

### CASE FINDING

Users of care only

### DESCRIPTION OF CASE FINDING

Adults age 18 years and older evaluated for possible deep vein thrombosis (DVT)

A list of all adult patients evaluated for DVT during the previous target period. The medical records can be reviewed to determine the documentation of a low clinical pretest probability, negative D-dimer and the performance of a leg compression ultrasound.

Data may be collected semiannually.

### DENOMINATOR SAMPLING FRAME

Patients associated with provider

### DENOMINATOR INCLUSIONS/EXCLUSIONS

#### Inclusions

Total number of adult patients suspected of deep vein thrombosis (DVT) who have a low clinical pretest probability\* and a negative D-dimer test

#### \*Wells Model of Clinical Pretest Probability of DVT

- Active Cancer (current treatment or treated within the last 6 months, or palliative) -- 1 point
- Paralysis, paresis, or recent plaster immobilization of lower extremity -- 1 point
- Recently bedridden for more than 3 days or major surgery within 4 weeks -- 1 point
- Localized tenderness along the distribution of the deep venous system -- 1 point
- Entire leg swollen -- 1 point
- Calf swollen by more than 3 cm when compared to asymptomatic leg (measured 10 cm below the tibial tuberosity) -- 1 point
- Pitting edema (greater in the symptomatic leg) -- 1 point
- Collateral superficial veins (non-varicose) -- 1 point
- Alternative diagnosis as likely or greater than that of deep vein thrombosis -- (-)2 points

Scoring:

If both legs are symptomatic, score the more severe side.

- High risk: scored 3 or more
- Moderate risk: scored 1-2
- Low risk: scored 0 or less

### **Exclusions**

Unspecified

## **RELATIONSHIP OF DENOMINATOR TO NUMERATOR**

All cases in the denominator are equally eligible to appear in the numerator

## **DENOMINATOR (INDEX) EVENT**

Clinical Condition  
Diagnostic Evaluation

## **DENOMINATOR TIME WINDOW**

Time window brackets index event

## **NUMERATOR INCLUSIONS/EXCLUSIONS**

### **Inclusions**

Total number of adult patients suspected of deep vein thrombosis (DVT) who have a low clinical pretest probability and a negative D-dimer test who undergo a leg duplex ultrasound with compression

### **Exclusions**

Unspecified

## **MEASURE RESULTS UNDER CONTROL OF HEALTH CARE PROFESSIONALS, ORGANIZATIONS AND/OR POLICYMAKERS**

The measure results are somewhat or substantially under the control of the health care professionals, organizations and/or policymakers to whom the measure applies.

## **NUMERATOR TIME WINDOW**

Episode of care

## **DATA SOURCE**

Administrative data  
Medical record

**LEVEL OF DETERMINATION OF QUALITY**

Individual Case

**PRE-EXISTING INSTRUMENT USED**

Unspecified

**Computation of the Measure****SCORING**

Rate

**INTERPRETATION OF SCORE**

Better quality is associated with a lower score

**ALLOWANCE FOR PATIENT FACTORS**

Unspecified

**STANDARD OF COMPARISON**

Internal time comparison

**Evaluation of Measure Properties****EXTENT OF MEASURE TESTING**

Unspecified

**Identifying Information****ORIGINAL TITLE**

Percentage of adult patients suspected of DVT who have leg duplex ultrasound with compression performed, despite a low clinical pretest probability and a negative D-dimer test.

**MEASURE COLLECTION**

[Venous Thromboembolism Diagnosis and Treatment Measures](#)

**DEVELOPER**

Institute for Clinical Systems Improvement

## **FUNDING SOURCE(S)**

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## **COMPOSITION OF THE GROUP THAT DEVELOPED THE MEASURE**

*Work Group Members:* Bruce Burnett, MD (Work Group Leader) (Park Nicollet Health Services) (Internal Medicine); Mary Michener, MD (Winona Clinic) (Family Medicine); Denise Dupras, MD (Mayo Clinic) (Internal Medicine); Thomas Gabert, MD, MPH (Marshfield Clinic) (Internal Medicine); Seema Maddali, MD, MPH (Fairview Health Services) (Internal Medicine); Cindy Felty, NP (Mayo Clinic) (Nursing and Health Education); Peter Marshall, PharmD (HealthPartners Health Plan) (Pharmacy); Keith Harmon, MD (Park Nicollet Health Services) (Pulmonology); Mark Melin, MD (Park Nicollet Health Services) (Vascular Surgery); Penny Fredrickson (Institute for Clinical Systems Improvement) (Facilitator); Myounghee Hanson (Institute for Clinical Systems Improvement) (Facilitator)

## **FINANCIAL DISCLOSURES/OTHER POTENTIAL CONFLICTS OF INTEREST**

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No work group members have potential conflicts of interest to disclose.

## **ADAPTATION**

Measure was not adapted from another source.

## **RELEASE DATE**

2006 Feb

## **REVISION DATE**

2009 Feb

## **MEASURE STATUS**

This is the current release of the measure.

This measure updates a previous version: Institute for Clinical Systems Improvement (ICSI). Venous thromboembolism. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2007 Jun. 91 p.

## **SOURCE(S)**

Institute for Clinical Systems Improvement (ICSI). Venous thromboembolism diagnosis and treatment. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2009 Feb. 79 p. [220 references]

## **MEASURE AVAILABILITY**

The individual measure, "Percentage of Adult Patients Suspected of DVT Who Have Leg Duplex Ultrasound with Compression Performed, Despite a Low Clinical Pretest Probability and a Negative D-dimer Test," is published in "Health Care Guideline: Venous Thromboembolism Diagnosis and Treatment." This document is available from the [Institute for Clinical Systems Improvement \(ICSI\) Web site](#).

For more information, contact ICSI at, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; phone: 952-814-7060; fax: 952-858-9675; Web site: [www.icsi.org](http://www.icsi.org); e-mail: [icsi.info@icsi.org](mailto:icsi.info@icsi.org).

## **NQMC STATUS**

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